Poster session

Neutrophil-to-lymphocyte ratio and treatment outcome in NSCLC patients received EGFR-TKI as first or second-line therapy

Genju Koh1,4, Hiromasa Harada3, Michihiko Miyaji3,4, Reika Takeuchi5, Shinpachi Yamaoka4, Masayuki Hino5

1Division of Oncology, Tokusyukai Yao General Hospital
2Division of Pulmonology, Tokusyukai Yao General Hospital
3Department of Hematology and Rheumatology, Saiseikai Noe Hospital
4Division of Oncology, Department of Pulmonology, Saiseikai Noe Hospital
5Division of Oncology Nursing, Saiseikai Noe Hospital
6Department of Hemato-Oncology, Osaka City University

Background: It has been reported that elevated neutrophil to lymphocyte ratio (NLR) is associated with worse clinical outcome of the chemotherapy in non-small cell lung cancer (NSCLC). But there have been few reports on the utility of NLR in EGFR-TKI therapy. We investigated the clinical outcome of NSCLC patients receiving EGFR-TKI as first or second-line treatment with elevated NLR.

Methods: The medical charts of all NSCLC patients (n = 89) treated with EGFR-TKI between March 2010 and Dec 2014 at two hospitals were reviewed. Patients with infection or receiving EGFR-TKI as beyond second-line were excluded.

Results: 63 patients were assessable for survival periods and pretreatment NLR. Of them, 47 patients received EGFR-TKI as first-line and 16 patients received as second-line. Elevated NLR was observed in 20 of 67 patients (High NLR was defined as NLR > 3.5). Time to treatment failure (TTF) of first-line EGFR-TKI was 295 days in high NLR group and 246 days in low NLR group (<3.5) (Log-rank p = 0.78). Overall survival (OS) from first line EGFR-TKI was 575 days in high NLR group and 765 days in low NLR group (Log-rank p = 0.19). TTF of the second line EGFR-TKI was 295 days in high NLR group and 462 days in low NLR group (Log-rank p = 0.44). OS of the second-line EGFR-TKI was 622 days in high NLR group and 836 days (Log-rank p = 0.13). Interval time from first-line chemotherapy to second-line EGFR-TKI were similar in both NLR groups (log NLR vs. high NLR: p = 0.49).

Conclusion: OS from EGFR-TKI treatment tended to be shorter with high NLR group although statistical significance was not noted. However, TTF of EGFR-TKI treatment was not affected by NLR state in both patients of first and second-line TKI. Although this study is limited by several factors, it indicate that Elevated NLR is likely to be worse prognostic factor in patients with NSCLC receiving EGFR-TKI as first- and second-line treatment but not to be predictive factor for EGFR-TKI. Updated data will be presented.